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# WEEKLY STATION REPORTS

## OF THE DIVISION OF

## DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 2 1936

Not for publication without
prior consent of this division.

# REPORT FOR THE WEEK ENDING MAY 2, 1936.

## HAVRE:

Favorable weather for field work prevailed during the week, and seeding of spring wheat, spring rye, oats, barley, peas, and sweetclover was completed in the D. L. A. project. Plantings of various small grains in certain projects in other parts of the experimental field also were completed. Winter wheat in the tillage method experiments and crop rotations will have to be reseeded on account of stands varying from complete failures to those which have thinly spotted survivals. Native range conditions improved rapidly with considerable new growth now in evidence.

Visitors included E. H. Aicher, State Coordinator, Soil Conservation; and L. L. Daley, in charge of Regional Research S. C. S., who inspected crested wheatgrass investigational work.

Maximum temperature, 70°; minimum, 25°; precipitation, 0.05 inch.

## HUNTLEY:

Although the last week continued cool and dry all vegetation made noticeable advancement. Grasses on range and in pastures have turned quite green and alfalfa is starting well. Fall grains have made some improvement, although they are far below normal in condition. In fact, spring grains are taller and more vigorous than winter wheat and rye. Spring wheat, oats, and barley are up with excellent stands on fallow, disked cornland, and stubble but are patchy on most of the plots plowed either in spring or fall and on the green manure treatments. Flax is coming up, but emergence is not yet far enough along to note. Crested wheatgrass on both fall and spring plantings is up with apparently equally good stands on all seeding methods. A good rain would benefit all crops.

Maximum temperature, 69°; minimum, 25°; precipitation, trace.

## JUDITH BASIN:

The ground was too wet for field work the first two days of the week, but good progress was made the last few days on several projects. The cattle for the experimental pastures were weighed and four animals were turned on the bromegrass plot, tree replacements were transplanted in the shelterbelt tests, spring seedings of crested wheatgrass were made on the reseeding of abandoned land project, small grains and crested wheatgrass plots were seeded on the forage project, and the spring wheat, barley, and oat nurseries were seeded.

Stands of slender wheatgrass and alfalfa in both experimental and general field plantings have winter killed badly, but crested wheat stands were not affected.

Maximum temperature, 63°; minimum, 25°; precipitation, 0.13 inch.

SHERIDAN:

Somewhat cooler weather prevailed over the week than during the previous two weeks. There were several light showers and one rain sufficient to form contact with moisture beneath the surface. This put the surface in good condition again for all new seedings. Grass and alfalfa made good growth, winter wheat made some progress, and more of the earliest seedings of spring grain emerged. Grasses, alfalfa, and sweetclover were sown, the light rain allowing the surface to be worked up in better condition for seeding these crops than at any time this spring. Plowing for flax in the rotations was completed. Nearly all alfalfa was either spring toothed with alfalfa teeth or duckfooted with narrow teeth; weeds, especially Russian thistles, being quite thick and making a heavy growth in nearly all seedings.

Nursery stock was received from Mandan this morning, and a part of it planted.

Maximum temperature, 62°; minimum, 30°; precipitation, 0.40 inch.

DICKINSON:

A slow, cold rain on April 30 amounted to 0.29 inch. This wet the surface soil so that grains should germinate uniformly and was of some benefit to all crops.

Moderate temperature most of the week permitted about normal growth of crops. On the 28th the minimum temperature of 16° did not cause any obvious damage at the station, though it was reported to have damaged wheat in low places where it had emerged.

Wheat on the rotation plots seeded April 16 is beginning to come up. Winter rye seeded in stubble now appears to have about half a stand. It is very slow in developing and has little more growth than spring wheat. Winter wheat is nearly all dead. The plots on the rotations were reseeded to spring wheat the first of the week. Grasses have made fair growth during the week but would be greatly benefited by rains. Alfalfa and sweetclover are barely beginning to show green. It is still uncertain whether good stands will develop from last year's seeding. Some of the plants are dead, probably because of the extremely dry soil during the fall and winter months.

About 500 each of ponderosa pine and Colorado blue spruce transplants were received from the Northern Great Plains Field Station and planted.

Visitors included William Leary, Extension Agronomist, North Dakota Agricultural College; Harper Brush, District Supervisor, Extension Division; and C. H. Plath, Specialist in Land Planning, Resettlement Administration.

Maximum temperature, 63°; minimum, 16°; precipitation, 0.29 inch.

Precipitation for the 4 months ending April 30 was 1.77 inches, or 1.10 inches less than the normal and 2.26 inches less than in 1935.

MANDAN:

Agronomy - The past week has been cool. Today, May 2, is the first good growing day of the season. Wheat seeded two weeks ago is just starting to come up. A few grasses have been seeded in the forage crop series. Plowing has been completed for corn varieties and silage.

The first rain of the month fell on the 29th and 30th. It was enough to wet the top soil, which was badly in need of moisture. The total rainfall for the month was 0.48 inch, or only about a third of normal.

Maximum temperature, 63°; minimum, 18°; precipitation, 0.45 inch..

Arboriculture - Shipping of nursery tree stock to shelter belt cooperators has continued during the week and has now been practically completed. Replacement trees have been planted in various hedges on the station, and a start has been made on replanting the conifer rows in the main windbreak. Moisture conditions are now favorable for germination of seed immediately temperature conditions become favorable.

Horticulture - First planting of vegetables in the acre garden and coulee garden was done on April 21. The top soil was dry and exceedingly cloddy. Showers on April 30 remedied this somewhat. Replanting of dead shrubbery about the grounds has been in progress during the latter part of the week, and much still remains to be done as the effects of the severe winter show up more and more. Lawns seem to be in better condition than in many years, due perhaps to the heavy snow cover prevailing all winter. The season seems late. Grass is slow to start and buds tardy in unfolding.

Fruit trees were packed for cooperators on May 1. Planting in the orchards and fruit breeding blocks has been completed. Eighty-eight trees were tubbed for fruit breeding work. No apples were included as we have large numbers of apple crosses in the field. Spring pruning is still in progress, but should be finished early next week.

Visitors for the week included A. C. Dillman, Cereal Crops and Diseases.

BELLE FOURCHE:

The outstanding climatic feature of the week was a storm on April 29 and 30, in which approximately 9 inches of wet, slushy snow were received following a light rain. A total of 1.72 inches precipitation was recorded during the 2 days, and as the snow melted slowly, nearly all of the moisture was absorbed by the soil. The heavy snow apparently was centered within a 20 mile radius of Newell, but smaller amounts of precipitation in the form of rain were distributed over a wide area. The rain and snow relieved a droughty condition which was becoming quite serious, especially on the range where a shortage of water for livestock existed, and very little moisture was present in the soil.

Good stands of all crops should be obtained and crop prospects are now much brighter than usual for this time of the season. Plant growth has been backward, owing to the low temperatures which have prevailed, but fall grain continues to show very marked improvement. Plowing for corn was completed early in the week.

Maximum temperature, 68°; minimum, 28°; precipitation, 2.03 inches.

ARCHER:

The weather during the week ending May 2 was cool and wet with considerable fog and mist. These conditions prevented practically all field work. Before the rains occurred the soil was so dry that germination was slow.

Crested wheatgrass has made sufficient growth to allow pasturing, and the dairy cows were turned on it May 1. The prairie grasses furnish feed for sheep and dry cattle. Winter rye has made good growth. Some of the trees are sending out leaves.

During the week the wheat, oats, and barley were seeded in the rotation plots. Other work consisted of hauling manure and getting the dairy summer pasture experiment under way. Lambing is in progress.

Maximum temperature, 73°; minimum, 33°; precipitation, 0.91 inch; April, 1.44 inches.

NORTH PLATTE: (Report for the two weeks ending May 2, 1936.)

After three weeks of cold, dry weather, very unfavorable for crop growth, April ended with a week of cloudy weather and several days of rain over most of the State. At this station rain on three days brought the total for the month to within 0.23 inch of its normal. Very little of this was lost as run-off, and cool cloudy weather intervening permitted good penetration without heavy loss from evaporation.

Winter wheat that previous to the rains was showing distress from lack of moisture is now growing rapidly, has covered the ground, and will soon begin jointing. All grain crops, trees, and shrubs are about two weeks behind normal development for this date.

Livestock Feeders' Day at the station May 2 was attended by 250 to 300 people.

Precipitation for the week, 1.50 inches; for April, 1.83 inches. April temperature extremes - minimum, -4°; maximum, 85°.

AKRON:

The past has been a week of local showers with almost continuous foggy or cloudy days and nights. Precipitation has been recorded on each of the past 7 days, but in measurable quantities on only 4. The heaviest fall occurred early Wednesday evening, as a hard dashing thunder shower, after a day of damp, foggy weather. This brought the April total to 2.08 inches, very near the average of 2.22 inches.

A 4-horse team was occuppied on the disk most all week preparing increase small-grain stubble land so that it can be maintained as fallow by means of the rod weeder. Rotation plot blocking was completed early in the week, and the roadways immediately duck-foot cultivated. Other jobs were odd clean-up and burning of accumulated tumbled-in thistles.

Orchard trees are breaking into leaf, and seedling and root-sprout plums are blooming. Forest deciduous trees are beginning to show leaf-growth activity. Winter wheat has made remarkable growth progress the past month and is now jointing on fallow-land preparation. Spring seeded small grain stands are far from satisfactory, and emergence following this past week's rains will only result in ragged

appearance and uneven heading and ripening. Weeds, thistles, are vigorously growing on the stubble plots, and it new looks like a 10th to 15th of May plowing date for fallow at this station.

Three officials of the Regional Soil Conservation Service office at Amarillo spent Thursday forenoon at the station. Hurlay Fellows arrived Friday morning and started pathological studies on root diseases of winter wheat.

Maximum temperature, 75°; minimum, 34°; precipitation, 1.13 inches.

COLBY:

This has been a rainy week with almost no rain. Precipitation was recorded every day but one. It has been cloudy and misty most of the time. On two days it was very windy, but there was almost no dust blowing.

Apples, pears, and cherries are in bloom, and nearly all trees are leafing out. Pastures are green for the most part. Russian thistles are greening up the landscape generally. The spring small grains and peas are growing nicely. The winter wheat which survives is making rapid growth. The winter wheat on the station has deteriorated to practically zero.

Maximum temperature, 77°; minimum, 39°; precipitation, 0.20 inch.
Precipitation for April, 1.07 inches; 49-year average, 2.07 inches.
Precipitation, January 1 to May 1, 1.72 inches.

HAYS:

A light rain on the night of the 25th followed by fog two forenoons and partly cloudy weather the remainder of the week provided favorable conditions for wheat. Fields beginning to suffer from drought have improved, but the rain added sufficient moisture to carry the crop for only a few days. A farmer who came into the office as this report was being prepared said, "My wheat looked good after the rain, but I noticed today it has commenced going backward," although his case is one of late-plowing, early prepared land is not a great deal better. His statement describes the condition of wheat over too large an area. A trip 50 miles east yesterday revealed the fact that while the wheat still looks good generally there are many patches in fields, and some whole fields that show by the color of the wheat and its general appearance that the supply of easily available moisture is nearly exhausted.

Wheat on the project is jointing. On fallowed ground it is about 6 inches high and on cropped land from 2 to 4 inches high. Continuously stubbled-in wheat on plot 591-A is much better than it has been at this time of the year for several years. The stand and color is good and the growth uniform at about 2 inches high; the growth, however, is much thinner than on tilled land. The wheat that received a top dressing of straw in the fall, (Rot. 554) and all the plots upon which the seedbed preparation was commenced late are now slightly lighter in color than the wheat on other plots.

Weeds are emerging thick everywhere. In places the millions of tiny plants are virtually heaving the top soil - demonstrating the fact that "united effort is powerful", however the spring small grains

have a better start ahead of the weeds this spring than usual and may be able to out-grow them. The first outburst of weeds was killed by a late freeze which occurred a few days before the emergence of the small grain crops.

The degree to which spring has developed may be indicated by stating the pastures soon will furnish some grazing; deciduous trees along the streams are about 1/3 in leaf; oak leaves are about the size of squirrel's ears; grape leaves are beginning to open, and Spirea and lilacs are in bloom.

The results of unfavorable conditions that have prevailed for trees is indicated by the fact that a number of red cedar trees are dead this spring, as well as many more deciduous trees.

Work on the project consisted largely in finishing the job of trimming small grain plots, duckfooting all plowed and fallowed plots (for row crops) to destroy a heavy crop of weeds, disking stalks and listing ground in the borders for sorghum.

Maximum temperature, 85°; minimum, 40°; precipitation, 0.47 inch; total precipitation for the month of April, 0.97 inch.

TUCUMCARI:

The drought continues, with a total of 0.71 inch received in 1936 to date, making 19.89 inches during the past 30 months. Trees and grass look very vigorous considering the unfavorable conditions. Very little dead wood existed this spring on shade and shelter-belt trees.

Station crop land has in most cases been blank listed or field cultivated - no further work will be attempted until rain falls.

Wheat which still survives on the plains is in a critical condition. A large acreage has of course failed to survive.

Maximum temperature, 89°; minimum, 43°; precipitation, none.

DALHART:

With the soil too dry for field work and with no spring field work done, it is quite easy for one to be discouraged over prospects for the present season. Conditions so far are more like those of 1933, when very little spring moisture was received. In walking over grass land green leaves are seen only occasionally. Very few weeds have started, and the shifting sand keeps them punished. With only 0.02 inch of rain during the past 90 days and only 1.99 inches during the past 7 months it is evident that crop planting is useless. Trees that are not too severely drought injured are now leafing out, though for the most part sparingly. Flowering willows are leafing out, which is about a week early for them.

Work during the week consisted of watering tree replacements as water was available, miscellaneous clean up, and the starting of a new sewage disposal system for the office. Soil blowing was rather severe on one day during the week.

BIG SPRING:

Hot, dry weather has prevailed again during the past week; several good rain prospects have appeared, but they have not developed into anything but a little thunder. The rainfall for the month of April totaled 0.51 inch, but this amount was received in several showers which did little more than settle the dust at any one time.

The May 1 date of cotton planting was made during the week, but it is doubtful if it will emerge without more moisture. Fields that were plowed early last winter and kept free from weeds since still contain considerable moisture below the plow furrow, but where there has been any plant growth the soil is very hard and dry.

Station work has consisted of knifing increase fields, cultivating plots, watering trees and shrubs, and grinding feed. Maximum temperature, 97°; minimum, 55°; precipitation, 0.09 inch.

LAWTON:

Observations made during the past week in 10 southwestern Oklahoma counties including Comanche, Cotton, Stephens, Tillman, Jackson, Kiowa, Greer, Washita, Caddo, and Grady, show that this territory has never been closer to a complete wheat failure than at present. At the time these observations were made there was a chance for a meager production of spring seeded oats. Fields of Volunteer oats were fully headed, and in all instances they were too short and too thin to mow for hay. A good many fields of the spring seeded oats were in the first headed stage and the plants were very short. Extremely few fields of corn were to be seen, and the ground was too dry to plant cotton or feed crops.

Good rains have been scattered over much of this territory since the observations were made. In many places the rains were torrential in character and heavy run-off made considerable stock water. In general, the rains were quite spotted, and many localities have not received any drought relief. Oats will make an excellent response to the improved moisture conditions in most instances, but wheat, with very few exceptions, cannot make much recovery.

Wheat grown in the variety test and on some of the rotation plots will likely yield an inferior crop.

The drought period of 147 days, December 5 to April 30, with a total rain fall of 0.68 inch was broken locally by 0.89 inch rainfall May 1 and 2. A good many localities within the county reported as much as 1.5 to 3 inches at this time, but the southwestern part of the county did not receive any moisture. These rains wherever received will permit late plantings of gardens and the prosecution of field work so necessary for the planting of cotton and feed crops. The maximum temperature for the past week was 98°.

WOODWARD:

A slow falling rain of 0.44 inch last Sunday night somewhat relieved the drought situation, at least temporarily. Cool, cloudy weather has prevailed most of the week. Some sections in this region reported rains of 1 to 2 inches during the week, and wheat in several localities is reported as looking considerably improved over a week ago.

Most trees and shrubs are coming into good foliage and early varieties of iris are starting to bloom.

Setting out tomato plants, taking soil samples, and graveling yards and roadways comprised most of the station work during the week. Maximum temperature, 91°; minimum, 49°; precipitation, 0.45 inch.

PENDLETON:

The weather during the past week has been favorable for all crops, although a good rain would be most welcome. Ranges and meadows are in good condition. Winter wheat and spring wheat are growing rapidly, many winter wheat fields have numerous yellow spots scattered through the fields. Sheepmen are moving their bands of sheep to the summer range in the mountains. Shearing is in full swing. A grass nursery comprising 50 varieties of cultivated grasses, in 450 22-foot rows, was sown this spring in conjunction with the Soil Conservation Service. A series of 16 grass mixtures in triplicate 1/20 acre plots was also sown this spring, the Soil Conservation Service furnishing the seed, drill, and man to help with the seeding. These grass mixtures have emerged with good stands, but the nursery seedings are rather ragged in stands.

Visitors: Chancellor Frederick M. Hunter, Oregon State System of Higher Education; Director Wm. A. Schoenfeld, Oregon Experiment Station; Prof. G. R. Hyslop, Oregon State College; H. G. Avery, County Agent, Union Co., La Grande, Ore.; S. C. Salmon, Cereal Crops and Diseases, Washington, D. C.

Maximum temperature, 72°; minimum, 34°; precipitation, 0.33 inch.

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REPORT FOR THE WEEK ENDING MAY 9, 1936.

HAVRE:

Precipitation during the past month has been very light, and rain will be necessary shortly. Seedbed preparation for flax, corn, potatoes, beans, sunflowers, and safflower was recently completed in the experimental field, and plowing for fallow is now in progress on the general farm. Winter wheat was reseeded this week and spring cereal nursery plantings were made.

There is evidence of widespread winter injury and considerable killing out of station alfalfa, both on dry land and under irrigation. The extent to which the crop will recover is rather questionable at the present writing. Small grains are beginning to emerge, and stands appear quite satisfactory in most instances. Native cottonwood and certain species of shrubbery are beginning to leaf out. Range pastures on the station were sufficiently advanced to graze, but showers are needed to continue the growth of grass.

Station visitors included H. H. Swain, Executive Secretary of the University of Montana; G. H. Vande Bogart, President of North Montana College; Messrs. Sam L. Sloan and Glenn Hays of the Soil Conservation Service; and L. B. Searle of Indian Land Resettlement.

Maximum temperature, 88°; minimum, 40°; precipitation, 0.14 inch.

JUDITH BASIN:

The stands of winter wheat on most rotation plots were thinned or totally depleted by winter killing, and all except two plots in the dry land rotations were cultivated and reseeded to spring wheat the first part of the week. The two plots in rotations 51 and 115, Field B, have stands of approximately 50 percent due, no doubt, to the added protection afforded by the rough, trashy ground on these plots where rye is plowed under as a green manure crop. Winter wheat seeded on fallow in the method of tillage experiment and potato rotations was totally winter-killed and these plots have been reseeded.

A rain that totaled 0.98 inch interrupted field work Wednesday afternoon and Thursday.

Varietal plots of sweetclover and plots of native and cultivated grasses for grasshopper studies were seeded on the forage project. The flax varietal plots were also seeded the first part of the week. Conifer trees were transplanted in the experimental shelter belt to replace those that have not survived.

The weather has been too cold to permit maximum plant growth, but with the present soil moisture condition rapid growth is expected when the temperature rises.

Maximum temperature, 80°; minimum, 33°; precipitation, 0.98 inch.

HUNTLEY:

The first rain of consequence for this season was received during the week. The precipitation came in the form of intermittent gentle showers extending through two nights and a day. A day of cloudy, cool weather followed the rain period and facilitated the absorption of the moisture by the soil. Flax, alfalfa, and grasses emerged before the soil crusted over, and the stands on all plots appear to be very good. Spring-sown grains and peas planted on plowed land are also coming up with good stands since the rain. Fall-sown grains were revived by the timely moisture but are still in poor condition.

Preparation of land for corn was begun early in the week but had to be discontinued for the time being because of wet soil.

Maximum temperature, 91°; minimum, 34°; precipitation, 0.91 inch.

DICKINSON:

Another dry week has not changed the outlook much. A shower of 0.23 inch on the 5th was refreshing, but strong winds dried out the soil again the next day.

Alfalfa, sweetclover, flax, and millet were seeded May 8 on the rotations. Wheat and oats have developed fairly well. Stands have not completely emerged on a few plots where the soil was cloddy when seeded. Grasses have grown more than the grains or legumes. All alfalfa and sweetclover are backward, and it appears that most of the varietal planting will have to be reseeded. In the pasture seedings of 1935 all the grasses have fair to good stands but alfalfa and sweetclover are thin. Trees and shrubbery are slow in developing. No tree is yet leafed.

A hundred 5-year old cedar transplants from J. H. Gerbracht were set in the garden; these are from seed collected near the Burning Coal Mine in Slope County and are especially fine specimens.

Visitors were R. L. Shotwell, E. G. Davis, F. D. Butcher, and F. G. Butcher, Bureau of Entomology.

Maximum temperature, 82°; minimum, 29°; precipitation, 0.23 inch.

SHERIDAN:

Extremes for the season of both heat and cold were experienced over the week. Following two days of hot weather on the 4th and 5th, the 6th and 7th were cold and cloudy with high winds the most of the time. No precipitation fell in this section, but there was a covering of new snow within sight of the station on the northwest, as well as on the foothills of the mountains on the west.

Crop growth continued about normal. The surface dried rapidly, and most seed sown shallow immediately following the light rain of last week is now in dry soil. The remainder of the early sown crops on the station emerged during the week, with the May 1 seeding of barley, wheat, and flax just beginning to emerge today, and oats in the same seeding not showing. Alfalfa and sweetclover drilled April 29 also have begun to emerge, with broadcast seedings of the same date not showing any.

Fallow and stubbled plots and fall plowing for flax, corn, and later crops were duckfooted. Plowing for corn and later crops was in progress the most of the week. Pigs were vaccinated, weighed, and placed on pasture.

Dr. Hildreth, Cheyenne, was at the station the middle of the week taking notes on fruit plantings and overseeing the planting of replacements.

Mormon crickets are reported thick over large areas within a few miles of the station.

Maximum temperature, 88°; minimum, 29°; precipitation, trace.

MANDAN:

Agronomy - The past week has been cool and dry with one day of high wind. Roads in the main field were seeded down, and an early planting of corn was made. A small field of barley was seeded for feed, and the south field has been seeded to oats. Crested wheatgrass is growing slowly and is in need of rain. While it would make pasture at the present time, the growth is below normal. Blue grama grass is starting its growth about two weeks earlier than in 1935.

Sweetclover that was seeded last year is practically all dead. Sweetclover seeded in a grass mixture at the pasture last year is all dead, except in low spots.

Maximum temperature, 85°; minimum, 34°; precipitation, 0.03 inch.

Horticulture - The first spray for fruit trees was applied during the week, lime sulphur and lead arsenate being used. Buds of apples and plums are just starting to show signs of growth. Topworking of apples was finished in the early part of the week. Potatoes are being dipped and cut for planting. The nursery was irrigated on May 7. Seeds in the seedbeds are now germinating and showing fair stands.

Cabbage, cauliflower, broccoli, lettuce, and Bermuda onions were set out in the various plots during the early part of the week. The topsoil is somewhat dry, and a check in the growth of the young plants was quite evident, however, a good stand was obtained and most of the plants seem to be holding their own.

Digging out old and badly winter injured plants in the shrubbery groups about the grounds and replacing with new plants, has been in progress during the week, also digging the ground around the tree, shrubbery, and perennial groups. Tulips, peonies, lillies, and other perennial flowers came through the winter in excellent condition. Flower buds on shrubbery seem to be somewhat injured, especially on lilacs, where a sparce bloom seems indicated this year. The lawns are greening up slowly and seem in need of moisture.

Asparagus and rhubarb plants are beginning to grow and should be ready for the first cutting next week.

Arboriculture - Several shipments of tree stock to the Soil Conservation Service and the U. S. Forest Service have been made during the week. Planting of trees to replace losses in the various plantings on the station has continued during the week and is now practically completed. Pulling of stumps in discarded blocks is in progress. Present indications are that there will be considerable loss in several blocks which have suffered only minor or no losses in previous years.

Visitors for the week included R. L. Shotwell, E. G. Davis, F. D. Butcher, Bureau of Entomology; and F. G. Butcher, Extension Entomologist, North Dakota Agricultural College.

BELLE FOURCHE:

Warm weather prevailed the fore part of the week, but the last four days were comparatively cool, cloudy, and unsettled. No precipitation was received, and high winds caused rapid drying of the surface soil, but no soil movement occurred.

Small grain and grasses made a good growth, but other crops progressed slowly. Fall grain is tillering extensively, and some of the early spring grain is beginning to stool. Grasses, alfalfa, and sweetclover seeded in April are coming up nicely, and spring grain is up with perfect stands on fallow, rye green manure, corn, sorgo, and potato ground. Other cultural treatments present a ragged appearance, but grain germinating since the heavy snow in April is beginning to emerge, and good stands eventually will be obtained on all plots.

Field work consisted chiefly of disking, duckfooting, and harrowing the various corn plots, and planting corn.

F. A. Baker, U. S. Indian Service, Billings, Mont., visited the station over the week end.

Maximum temperature, 85°; minimum, 36°; precipitation, none.

ARCHER:

The weather was warm and clear during the first three days of the past week but cool and cloudy during the last four days. Rain and snow occurred during the night of April 7 and the early forenoon of April 8. The total precipitation amounted to 0.51 inch. High winds, which caused considerable damage in some sections, prevailed during the forenoon of April 6.

In this section the precipitation further stimulated the seeding of small cereals. Some corn has been planted, and soil preparation for corn is in full swing. Native grasses, winter rye, and the surviving winter wheat made good growth. Work at the station consisted of cleaning yards and seeding peas, alfalfa, clover, and grasses in the rotation plots. The W. P. A. work on the reservoir dam is still in progress. A crew of C. C. C. workers began work at the station April 6.

Maximum temperature, 83°; minimum, 31°; precipitation, 0.51 inch.

NORTH PLATTE:

Following three days of high wind and a severe dust storm on the night of May 5, the remainder of the week has been cloudy with intermittent showers that have made a substantial total. At the table station rain has been recorded on 6 of the 14 days since April 26, with a total for the period of 5.02 inches.

Small grains, alfalfa, weeds, and pastures are making excellent growth. Corn planting, of which there will be a large acreage on account of reduced acreages of winter wheat, will have a late beginning.

A crew of about 15 men are at work on the station picking Chinese elm seed for the shelter belt organization. The crop was reduced by about two-thirds as a result of the severe freeze in early April, but is the best that has been produced for several years.

Maximum temperature, 90°; minimum, 43°; precipitation, 2.50 inches.

AKRON:

Monday and Tuesday were excessively hot during the mid-day period when there was almost a complete lack of air movement. Wednesday brought a hard northwest wind which would have stirred up considerable dust earlier in the spring. Drizzling rain set in Thursday evening and has continued, intermittently, until Saturday noon. Although this precipitation has totaled close to 2 inches, there has been absolutely no run-off. Some have characterized it as a million dollar rain.

Early part of the week was devoted to making fill-in, and new plantings in the new forestry variety experiment, setting 32 fruit tree varieties in the new orchard, and toward terracing some of the cropped land across the railroad.

Winter wheat, already established, continues to make remarkable growth progress. Spring seeded grains have not germinated well and are not making satisfactory progress towards becoming well established. Our station situation seems to be peculiar in this respect, for farmers are generally enthusiastic over their present spring seeded small grain prospects. Native sod has apparently made impressive recovery from the bedraggled appearance early last spring. Caragana, apples, plums, and cherries are in full bloom, or breaking into bloom. Persian lilac is showing bloom color.

Wayne Austin of the Soil Conservation Service, Colorado Springs, spent Monday at the station making nursery seedings of soil binding perennials. S. C. Salmon and D. W. Robertson spent Monday afternoon at the station. John Kelso of the Cheyenne Horticultural Station, delivered forest and fruit tree varieties Monday evening. A. F. Hoffman, County Extension Agent of Phillips County spent a short time here Friday afternoon.

Maximum temperature, 89°; minimum, 34°; precipitation, 1.66 inches.

COLBY:

The long drought was ended this week by the heaviest rain since 1933. The week started out rainy with but little precipitation. Then followed four days of rather high wind with a bad dust storm between the evening of the 5th and the morning of the 7th. There was considerable soil blowing during this period on bare fields. On the 7th the wind continued with some dust in the air, but it was cloudy. At 4:50 p.m. it began to rain with a rather heavy smattering of hail for about 15 minutes. The rain continued until about 11:00 p.m. with considerable wind and thunder at times. It remained cloudy, misty, and rainy throughout the night and the next day until 7 o'clock in the evening. Two inches of water fell during this time.

The soil got a good soaking down to a depth of about 14 inches. There was some loss by run-off, and in places on the D. L. A. project in the roadways there was some washing. Where the basin lister had been used the moisture soaked down to a depth of about 20 inches, even where there was considerable slope.

Maximum temperature, 96°; minimum, 40°; precipitation, 2.12 inches.

HAYS:

Cloudy, rainy weather has prevailed. Precipitation occurred on four different days of the week. Temperatures have been moderate. The conditions have been ideal for recovery of wheat damaged by drought. Wheat on fallow is now from 8 to 12 inches high, on cropped land from 4 to 8 inches high. Rye which was previously reported damaged beyond recovery has apparently taken on new life and is now 6 to 8 inches high with a thin growth and beginning to head. The rye will be turned under as soon as the ground is sufficiently dry for plowing. Barley, oats, and spring wheat are making excellent growth, and are now about 5 inches high. Canadian field peas are also making good growth and are from 4 to 5 inches high. Pasture is coming on rapidly.

Rains during the week have completely changed the picture from what it was two weeks ago in this vicinity. Optimism prevails.

Maximum temperature, 94°; minimum, 43°; precipitation, 2.20 inches.

GARDEN CITY: (Report for the two weeks ending May 9, 1936.)

Rain has threatened and fallen in small amounts several times during the past two weeks. On the 5th, 0.51 inch fell, but dry winds of strong velocity were blowing dust by the evening of the 6th again. On May 7, following a severe dust storm, a heavy rain fell, continuing until the 9th in a series of slow showers. A total of 1.84 inches fell. This is nearly the first significant precipitation since last May.

Spring small grains show an irregular patchy stand, due to being planted in a soil with moisture present only in the upper 2 inches. Only a few winter wheat plants are alive on the plots. These will no doubt be choked out by weeds, which are making a rapid start.

Maximum temperature, 92°; minimum, 41°; precipitation, 2.45 inches.

TUCUMCARI:

Climatic conditions the past week have been extremely variable; periods of calm, high wind, cloudiness, clear skies, high temperatures, and cold rotating with quick succession. Two light showers were of no benefit, but the vigorous appearance of range vegetation and of trees is astonishing. The present spring has been nearly as unfavorable as that of the past two years, but all vegetation is in better condition. Spring plowing on the station has not been performed, but a large amount of spring listing has been done. No other preparation for planting has been done. The past week has been devoted to building repairs.

Maximum temperature, 94°; minimum, 38°; precipitation, 0.22 inch.

DALHART:

Two showers during the week furnished a total rainfall of 0.80 inch. The first of 0.27 inch was gone before the second was received. Penetration of the second rain, which fell Friday afternoon, will probably be less than 5 inches and, unless additional moisture comes soon will not permit preparation of land for row crops. This work, however, will be tried this next week.

Several severe sandstorms occurred during the week. They were of short duration but caused considerable shifting of sand.

Maximum temperature, 91°; minimum, 38°; precipitation, 0.80 inch.

BIG SPRING:

A local shower of 0.45 inch was received May 7; this relieved the hot, dry weather which has prevailed for the past month. Although this has not supplied sufficient moisture for planting purposes, it has made spring plowing of the plots possible. The soil is only wet down about 5 inches, but a fair job of plowing is being done. This rain was very spotted over the county; some sections are reporting sufficient rains for planting purposes, while in others the dust was barely laid. It will probably start the grass on the range, but more will be required before any appreciable growth will be made.

The winter wheat plots are beyond recovery, only a few green spots remain on any of them.

Station work has consisted mainly of knifing increase fields, duckfoot cultivating plots, and plowing. Other work has consisted of treating seed and watering trees and shrubs.

J. H. Jones of the Texas Station and Mr. Bonsma of South Africa, visited the station during the week.

Maximum temperature, 97°; minimum, 48°; precipitation, 0.45 inch.

WOODWARD:

The past week there were two days with high temperatures and high desiccating winds, and three days with light showers totaling 1.15 inches. The winds and high temperatures injured wheat on continuous cropping more than rains helped it. Most of it is past making anything but a moderate to very poor yield. Some of it on fallow may yield rather well if rains continue.

There are a great many ornamentals in bloom, some of which are as follows: Anchusas, poppies, iris, veronicas, penstemons, pinks, daylillies, spiderworts, mallows, verbenas, flax blue and yellow, fallugia, privets, dogwoods, mockoranges, honeysuckles, salvias, roses, skullycap, pyrethrums, gaillardias, linaris, scabiosas, primroses, centaurias. The richest show is that of Heckrott's honeysuckle with its wealth of flowers, red outside and clear white or with age a deep yellow inside. The gayest display is that of the daylillies, and poppies. The most arresting is that of a native penstemon with its unusually large opalescent flowers.

Station work for the week consisted of mowing rye plots; planting early dates of cotton, peanuts, and grasses; planting trees and shrubs; cultivating orchard and nursery; grubbing out dead trees; and grading roads.

Maximum temperature, 92°; minimum, 49°; precipitation, 1.15 inches.

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# WEEKLY STATION REPORTS

OF THE DIVISION OF

## DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 1[illegible] 1936

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# REPORT FOR THE WEEK ENDING MAY 16, 1936.

## HAVRE:

Weather conditions until the 14th continued dry and unfavorable for small grains and grasses in particular. Rainfall totaling 0.07 inch was received on the 15th. A maximum of 97° on the 14th was the highest in station experience for that early in the season.

The planting of corn, beans, potatoes, sunflowers, and safflowers in various experimental projects was completed. However, dry surface soil is delaying the regular seeding of flax, alfalfa, and grasses, which will not be sown until rains occur.

Maximum temperature, 97°; minimum, 36°; precipitation, 0.09 inch.

## JUDITH BASIN:

Growing weather prevailed throughout the week, with maximum temperatures ranging as high as 89°. All spring seeded crops have emerged with good stands and have made satisfactory progress. The growth of winter wheat, however, has been very backward, and some fields that apparently had good stands earlier this spring are now being reseeded.

Field work included the plowing and harrowing of rotation plots and general fields for corn, planting potatoes, plowing fallow plots, cultivating row seedings of forage crops, and plot trimming.

Four animals were turned on the native grass block of the experimental pastures May 13. This date is a month later than grazing was started on the crested wheatgrass and two weeks later than on the bromegrass.

Maximum temperature, 89°; minimum, 37°; precipitation, 0.02 inch.

## HUNTLEY:

A maximum temperature of 95° during the week established a new record high for the first half of May at this station. Temperatures in general, however, were about normal for this time of the year. Although rain threatened on several occasions, only light showers were received locally, but surrounding territory reported torrential downpours and light snows. Winter rye is coming along rapidly and looks thrifty but late. Winter wheat has made some improvement but is still far below standard. Spring-sown crops are all doing well, with most plots showing a full stand.

Field work has consisted of preparing land for corn and other late-season crops, weighing hogs and placing them on pasture, and cultivating spring-plowed alfalfa sod.

Maximum temperature, 95°; minimum, 35°; precipitation, trace.

## SHERIDAN:

Continued lack of spring rains, upon which crops this year are mainly dependent, with alternate cool and extremely hot weather for the season and high wind at times, and newly hatched grasshoppers appearing over the entire station and the most of the county in greater numbers than they have been observed at any time in recent years, were the principal characteristics of the week. Mormon crickets are spreading over larger areas than last year and are within about 5 miles of the station.

Seedings of crested wheatgrass made late last fall all started out in nice shape, but cannot go much further without rain.

The mixed grass pasture seeded last spring is coming with a good stand. The sweetclover is the mixture that seemed to be dead except in low spots some time ago, is now showing a fair stand.

Maximum temperature, 93°; minimum, 32°; precipitation, trace.

Arboriculture - The lining of conifer seedlings in the transplant field has continued during the week. Soil conditions are now becoming extremely dry at the surface, and considerable difficulty is experienced in cutting clean trenches. Seedlings are having a very difficult time in breaking through the hard surface, and the stand is likely to be greatly reduced if rain is not received in the near future.

Horticulture - The continued dry weather is becoming more and more serious. Killing back by winter injury and drought will be severe. Apples appear to be damaged to a greater degree than for a number of years. Injury to stone fruits is variable, but most native varieties seem to be in good condition. Japanese and sandcherry hybrids are showing severe injury. Sandcherries and most native fruits appear to be in good condition.

Hand crossing of fruits has been in progress throughout the week. Potatoes were planted on May 13 and 14.

The second planting of vegetables was completed during the week. So far nothing except peas has germinated from the first planting, due to dryness of the topsoil. Transplanted stock such as cabbage, cauliflower, broccoli, lettuce, endive, onions, etc., are still holding their own, but growth is practically at a standstill.

Winterkilling of ornamental shrubbery is becoming more and more evident. Spirea Van Houttei is killed to the ground in all locations where planted. S. arguta is also badly injured.

Prunus triloba, Hopa crab and Ribes aureum are in bloom about the station grounds at the present time. Usually the flower buds on P. triloba are killed in an ordinary winter while the bush seems perfectly hardy. The Hopa crab aside from its size, which makes it suitable for planting in special locations, is indeed a beautiful ornamental and is showing absolutely no winter injury.

BELLE FOURCHE:

The greater part of the week was comparatively warm, and May 15, with a maximum temperature of 95°, was the hottest day of record for the first half of May. A warm southeast wind prevailed until the middle of the afternoon, and a very high west wind occurred late in the evening of the same day. Small grain was whipped and bruised badly by the wind, but the advanced crop growth and cloddy condition of the soil prevented soil drifting.

No precipitation has been received in May to date, and frequent strong winds have caused rapid drying of the soil, but soil samples taken during the week indicate that sufficient moisture is stored in the soil to meet the requirements of small grain for at least another week. Moisture has penetrated to an average depth of 16 inches on land cropped to spring wheat last year, and to a depth of approximately 30 inches on land summer-fallowed in 1935.

The warm weather enabled all crops to make a vigorous growth, but meadows and lawns are beginning to show the need of moisture. Late germinating seed is having considerable difficulty in breaking through a heavy soil crust, but good stands of all crops have been obtained on the various rotation plots. Owing to the rapid drying of the surface soil, much of the corn planted last week will not germinate until after rain is received. Corn plots were harrowed late in the week, and plowing of fallow was completed.

R. L. Shotwell, F. Butcher, and E. L. Davis, of the U. S. Entomological Laboratory, Bozeman, Mont., were station visitors.

Maximum temperature, 95°; minimum, 38°; precipitation, none.

ARCHER:

The weather during the week ending May 16 was mild with fog during the greater part of May 13. There is sufficient moisture for corn planting and the present growth of spring crops. The native grasses are furnishing sufficient feed for range stock. Most of the trees and shrubs are in leaf. The green ash, the last to leaf, are showing signs of life.

Work at the station consisted of seeding corn on the rotation plots, repairing fences, cleaning dry weeds from the fences, and seeding the land surrounding the reservoir dam to grass. The W.P.A. laborers have finished the dam except the ripraping of the face. A group of C.C.C. boys have been planting trees and cleaning the dry weeds from among the trees. They started to hoe and prune trees today.

M. F. Babb of the Horticultural Field Station; W. L. Quayle of the University of Wyoming; and Earl C. Myers and O. F. Weymouth of the Soil Conservation Research Division were station visitors.

Maximum temperature, 83°; minimum, 38°; precipitation, 0.07 inch.

AKRON:

The drizzling rain reported in progress last Saturday amounted to 0.26 inch. This brought the total of this series of drizzling rains to 1.92 inches as recorded by the rain gauge. The hail gauge recorded 2.27 inches from the same rains. Soil firmed so that field work could be resumed about Wednesday from which time teams, tractor, and men have been busy eliminating weeds which immediately emerged, or began active vigorous growth.

Ninety-one Eastern Red Cedars, Juniper virginiana, were set in the new forestry variety experiment early in the week. Rotation plots for fallow were plowed. Thistles were well established 1 to 2 inches tall. Rotation plots to be seeded to corn and sorgo were spring tooth harrowed to level and to eliminate emerged weeds. The two series to be seeded to the general forage variety experiment, and oat stubble land to be seeded to the bean variety experiment, were duck-foot cultivated. First date seedings of beans and proso were made promptly on the 15th. First date seeding of corn made April 20 has emerged to the best stand yet experienced but the plants are lacking in vivid green color. The series to be seeded to the crops of the rate and spacing corn project was rod-weeded.

It now appears that cut worms had much to do with the poor stands of the early spring seeded small grains. Stands are not more than 40 to 70 percent full today with no additional emergence since the recent rain. Winter wheat continues to make good growth progress, and is as promising today as at any similar time in the past. Persian lilac is a riot of bloom by this week end. Spirea Van Houttei is breaking into bloom. From the bird noises about the grounds it would appear that we now have about the full complement. Forest deciduous trees are slowly breaking into leaf.

T. G. Stewart, Extension Agronomist, D. W. Robertson, Agronomist, and Sam McCampbell, Extension Entomologist, visited early in the week. Earl Myers and O. F. Weymouth, of the Soil Conservation Research Division of the Washington office, are here this morning, Saturday.

Maximum temperature, 87°; minimum, 35°; precipitation, 0.28 inch.

NORTH PLATTE:

Excellent growing weather has followed the rains of the last two weeks. The rye is beginning to head, the winter wheat is jointing, and all small grains are looking good. The potatoes in the rotation plots are beginning to show up.

The corn in the variety plots and that to be used for inbreeding and for observation has been planted. Planting has been started in the rotation plots. All plots to be listed to corn have been freed from weeds by the use of the rod weeder.

Alleys and roadways have been marked and cultivated. The setting of permanent concrete markers on the sides and corners of the new rotation plots have been completed.

There has been no precipitation during the week. The weather has been generally clear.

Maximum temperature, 86°; minimum, 42°; precipitation, none.

COLBY:

This week was generally favorable for crop growth. The first three days were rainy, and the last four were generally pleasant, except for a rather severe dust storm which came up from the southeast at about 6 p.m. Friday and lasted nearly all night. The visibility was about a quarter of a mile, and there was some soil blowing on bare fields.

The barest ground on the station is on the winter wheat plots. The wheat has died out practically completely, and weeds have not started on the wheat plots, except here and there. On the stubble plots which were not seeded to wheat, thistles have come up thick.

The plowing, listing, and other tillage of the fallow plots was done on the 15th and 16th. All the plots which are to go to corn or to sorghums were one-wayed, except those for which other treatment is specified. All the blow furrows were leveled as were the plots listed in the fall or earlier in the spring, except the two where the planting is done by splitting ridges only. The ground was in almost ideal condition for tillage.

Maximum temperature, 92°; minimum, 40°; precipitation, 0.12 inch.

HAYS:

Generally quiet, partly cloudy weather prevailed. It was accompanied by moderate temperature until the last two days which were very warm and breezy, and during these two days considerable dust was noted high in the sky, indicating some soil drifting to the southwest.

Winter wheat and other small grain crops made good growth. Winter wheat and barley crops are in the boot, and the earliest heads are almost ready to emerge. Oats and spring wheat crops are looking good, but not quite so far advanced as the winter wheat and barley. There is now a full stand of all the spring small grains, but due to late germination of parts of certain drill rows which were in dry soil at time of seeding, the growth of these crops is not so even as that of the winter wheat. Rye recovered from drought sufficiently to make a thin growth 10 to 14 inches high and was beginning to head when plowed under May 15. Peas are making fair growth. The vines are now about 6 inches long.

Work included the collection of a few soil samples for moisture determinations, seeding of alfalfa (May 15), throwing in of ridges on plots blank listed for sorghum, except where other methods are prescribed, and weed killing on unseeded plots, roads, and alleys.

Maximum temperature, 93°; minimum, 46°; precipitation, 0.46 inch.

GARDEN CITY:

Rain that fell during the latter part of last week and the fore part of this, totaling 1.97 inches, was sufficient to put surface soil in good condition for the present. The rains were followed by several days of cloudy and cool weather resulting in lower than normal evaporation losses.

Field work during the week has consisted of plowing and listing plots to be fallowed, and splitting lister ridges and leveling ridges with the ridge buster on plots to be worked soon after May 1. All plots on which early cultivation is permissible were also spring tooth harrowed to kill the young weeds, roughen the surface to resist soil blowing, and to provide for more rapid absorption of water when additional rains come.

Rains of the past week were quite general, although somewhat lighter to the south and west than elsewhere in this part of the State. Many farmers are taking advantage of the opportunity to work their land to control soil blowing and to prepare seed bed for row crops. A few farm operators are still depending upon weed growth to stop soil drifting. Cropped land that has been allowed to blow all through the spring has been drifting badly during the past two days. Land cultivated since the rain, however, is holding in good shape.

Winter wheat in this immediate territory is a failure, except for a few isolated areas that received heavy rains last fall. Very little, if any, wheat will be produced on the experiment station. Alfalfa and cultivated grasses on irrigated land are making rapid growth. Indications are that the first cutting of alfalfa can be made within the next two weeks. Trees in the lawn area of the experiment station are in full leaf, but those on unirrigated land are developing slowly. A number of unirrigated trees show severe injury, and a few have died during the winter.

Maximum temperature, 90°; minimum, 42°; precipitation, 0.13 inch.

TUCUMCARI:

In spite of four days of cloudy or partly cloudy weather, with the wind in the north or northeast, rain has not been received. The present spring has been somewhat more extreme in extent of drought than 1935, although until early May the past four years have been nearly identical. In 1935 May precipitation was high, but the stored moisture of last fall was higher than the previous year.

Accumulative precipitation January 1 - May 16 for the past four years has been as follows: 1933, 0.67 inch; 1934, 0.62 inch; 1935, 2.82 inches; 1936, 0.93 inch. The normal for this $4\frac{1}{2}$-month period is 3.99 inches.

Wheat on the plains is past help, in most instances. Immediate rain will permit a few farmers to harvest some seed wheat, but the county crop may be safely considered practically a failure, irrespective of future rains. No field work has been attempted on the station the past week.

Maximum temperature, 88°; minimum, 38°; evaporation, 2.377 inches; wind velocity, 8.0 miles.

DALHART:

The spring plowed rotation plots, except for the 'A' plots, were plowed during the week. They were plowed much shallower than usual but a fair job of plowing was accomplished. The moisture received on Friday of the preceding week was all gone before this week end. The south field was also listed with difficulty, and some increase fields were also plowed. Two more days would see the completion of tillage of the station. However it does not seem advisable to work all of the west field because of the danger of sand accumulation. With the exception of four plots in the west field the station is in good condition. These plots are the 'C' plots of 84, 87, 88, and 89 which had a short weed stubble which caught a rather uniform layer of sand. It was impossible to remove this layer of sand, so these plots are higher than the surrounding plots. The present drought has brought forcibly home the fact that these sand accumulations will be lost in a relatively short time; especially where they are in a rotation which has bare ground during the winter.

Thursday and Friday gave considerable sand movement at the surface of the ground. If this movement continues, the furrows listed this week will soon fill up.

Maximum temperature, 89°; minimum, 43°; precipitation, trace.

BIG SPRING:

Temperatures have been somewhat lower this week, but soil moisture conditions have not improved to any extent. Light showers varying from 0.02 to 0.12 inch were received, but they merely settled the dust. Rains have been very spotted over the county; some farmers report sufficient moisture for planting purposes, and some few have their cotton up.

Plowing of the spring plowed plots was completed this week, and all plots in the D.L.A. field were disked and harrowed. This project is ready for planting as soon as sufficient moisture is received.

The May 15 date of planting of grain and forage sorghums was made on time as was also the cotton date. Cowpea and soybean varieties were also planted during the week. The sorghums may emerge on present moisture, but it is very doubtful if cotton can make it.

Maximum temperature, 90°; minimum, 48°; precipitation, 0.14 inch.

LAWTON: (Report for the period May 3 to 16, 1936.)

The rainfall of 2.13 inches recorded on 7 dates, May 1 to 11, came too late to be of much benefit to the wheat crop and the abandonment will be heavy. A fair crop of wheat will be produced in the variety test, if sufficient moisture is provided to fill the grain. There is also a fair chance for a meager crop on most of the rotation plots. Oats made a very nice response to the improved moisture conditions, and a light to medium good yield will result wherever the stand is fairly good. Emergence of seedings made in February and March was completed about May 7. Considerable March planted corn has also recently emerged.

The above mentioned rains made it possible to complete the preparation of seedbeds for spring-planted row crops, and plantings were made as rapidly as possible. Kafir planted May 6 emerged to good stands by the 16th except on listed plots which will likely have to be replanted. Stands of feterita are somewhat thin but probably good enough to retain. Cowpeas planted May 7 emerged to good stands on the 12th. Cotton was planted on the rotation plots on the 11th and 12th, and fair emergence was observed on the 17th. The chinch bug sorghum resistance project was planted May 6 - 11 and the variety test and spacing tests of cotton were planted May 12 - 13. The first planting in the date test was made May 15. Dry weather prevented the planting of the April 15 and May 1 plantings.

All the above crops were cultivated with a rotary hoe as soon as planting was completed in an attempt to control the weed growth which has been exceedingly vigorous since the early May rains.

Several plots of winter oats and winter barley were harvested May 15. Grain in the winter barley will be extremely light in weight. Early Blackhull wheat will be ready for harvest May 18 - 20.

Vegetation of all kinds has made rapid use of the moisture that became available early in May, and additional rains that are well distributed from now on will be very essential.

Station visitors during the past week include, M. A. McCall; I. M. Adkins, Denton, Tex.; F. A. Fenton, Stillwater, Okla.; and Dan Diehl, District County Agent, and several farmers who were interested in legumes and native grasses.

WOODWARD:

The mean rainfall for 20 years for the first 4½ months of the year is 7.09 inches. So far this year the precipitation is 2.53 inches. Still some of the winter wheat on continuous cropping could with good rains from now to harvest make 5 to 7 bushels though the average could hardly exceed 5. On fallow some of it might make 15 bushels. But without good rains, and with a few days of high, hot winds, it is possible that all of it might wither and die before any grain is matured.

Many farmers are planting sorghums. They say it was the early planted crops last year that made. And they are apprehensive the

drought may continue and the soil dry out so they cannot obtain stands later on.

If good rains do not come, we are fearful that most of the trees on the station will be riddled with borers and die. Heavy watering will be started on those immediately around the buildings, but even this is expensive.

PENDLETON: (Report for the two weeks ending May 16, 1936.)

Several high winds occurred during the past two weeks. On the 5th and 6th they did considerable damage to newly transplanted tomatoes and fruit trees in the Milton-Freewater section. On the 14th a real dust storm of only 20 minutes duration hit this section; lights on cars were necessary.

The winter wheat in this section will be shorter than last year from all present indications. The fall-sown wheat started heading on May 14, at a height of 18 inches. The spring wheat is growing rapidly and is now about 8 inches tall. Corn planted on the rotation plots on May 1, emerged with good stands on May 12. Beans were planted on May 12.

Visitors: C. E. Hill, State Coordinator, Soil Conservation Service, and 15 project managers and technical staff of the 7 projects in eastern Oregon.

Maximum temperature, 83°; minimum, 31°; precipitation, 0.37 inch.

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# WEEKLY STATION REPORTS

## OF THE DIVISION OF

## DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 23 1936

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# REPORT FOR THE WEEK ENDING MAY 23, 1936.

## HAVRE:

Dry weather continued. The total rainfall from April 1 to date has been 0.85 inch, or approximately 39 per cent of normal. A few light showers were received last week, but beneficial precipitation in this locality was mostly lacking. Considerable wind movement occurred on five days, the evaporation rate being high for this time of the year.

Plowing for fallow in the D. L. A. project was completed under conditions too dry for very satisfactory work. Corn, beans, and potatoes need rain for germination. The planting of flax, grasses, and alfalfa was still further delayed by the drought. The growth of grass has been checked and crested wheatgrass in particular "fired" badly, a condition also observed in former years having very deficient precipitation in the early spring.

Maximum temperature, 82°; minimum, 35°; precipitation, 0.16 inch.

## JUDITH BASIN:

Temperatures were cool and the wind blew almost continuously throughout the week. Evaporation was very high due to excessive air movement, and thick stands of grass started to show lack of moisture the first part of the week. Reports throughout the Judith Basin indicate that the growth of winter wheat has been very backward in comparison with spring-seeded grains. All spring grains have good stands and have made average growth.

Field work included planting corn on the rotations and general fields, plowing for fallow, cultivating plot alleys, and plot trimming.

Maximum temperature, 77°; minimum, 33°; precipitation, trace.

## HUNTLEY:

Although the dry weather continued throughout the week, several days were unseasonably cool and most crops did not suffer from lack of moisture. Crested wheatgrass is the only cultivated crop that has really looked dry to date. All crops have made a good growth. Winter wheat and rye are now jointing and have improved greatly in condition.

Tillage for corn was completed during the week, and the crop was planted. Rain will be needed to insure uniform germination on all plots, as the soil dried out rapidly after plowing, in spite of the fact that the soil was worked down to seedbed condition immediately after plowing. Other field work consisted of plowing miscellaneous fallow, cultivating roads, and placing the spring pigs on the annual-crop pastures.

Grasshoppers are hatching in large numbers in grass lands and alfalfa plots, and materials have been assembled for a poisoning campaign. On the irrigated lands the small grasshoppers have already destroyed several hundred acres of young sugar beets and seedling alfalfa.

Maximum temperature, 89°; minimum, 34°; precipitation, 0.02 inch.

SHERIDAN:

With no rain since April 28 and extremely high temperatures for the season over much of that time, the crop situation in this section probably is the worst now for this time of the season that it has been since 1919. Temperatures were considerably lower over the past week than over the week previous, but the mean still was above the average for the season.

Grass continues to fire, with crested wheatgrass and bromegrass beginning to head at a height of 4-8 inches. Alfalfa and winter rye also began to fire early in the week, and winter wheat where the growth is best is firing some now. Spring grain apparently still continues in good condition. Chances of any hay at all, except in low spots, are dwindling fast.

Corn was planted during the week, and land was partially prepared for seeding of sorgo, Sudan grass, and proso. It is doubtful if anything emerges, however, until there is some rain. Plants received from Cheyenne were planted except tomatoes, which were heeled in where they can be covered, because of continued danger of freezing. The remainder of late garden crops were planted also.

Maximum temperature, 89°; minimum, 33°; precipitation, trace.

MANDAN:

Agronomy - The past week has been one of continual drought and high wind. Wind prevailed for 7 days with little let-up. During the night of the 20th severe high wind caused considerable damage. Corn in the rotations was planted on the 18th, one day earlier than average. Other plantings of corn were completed early in the week. Small grain continues in fair condition but made little progress during the week. Crested wheatgrass has dried up badly in spots.

Maximum temperature, 85°; minimum, 37°; precipitation, none.

Cooperative grazing experiment - Steers for the grazing experiment were received on the 20th. Yearling Hereford steers were obtained this year, as the Agricultural College desired to use this class of stock. The steers average between 400 and 500 pounds and are of good quality. They were branded on the 22nd.

The high wind storms blew the fences full of thistles and tore down a good deal of fence. The crested wheatgrass pasture is badly dried up at present. The grass got a slow and poor start. The mixed grass pasture, seeded last year, is looking very good at present and is ready for pasture. Native vegetation is in fair condition for pasture at present. It is better than at the same time last year. Blue grama grass has made a good start. All the pastures have a carry over of feed, which they did not have last year.

The remaining 15 acres of the old bromegrass pasture has been prepared for some time for seeding, but because of high wind and dryness of the soil, seeding has been delayed.

Horticulture - The winds and dry weather that prevailed during the past week were very hard on fruit trees. Some of them were broken by wind, and more killing due to drought is becoming apparent.

Most fruit trees passed their full bloom stage during the week. Some crossing was done in the field, but this work was handicapped by wind and the weakened condition of the trees.

Hauling of brush and thistles, cultivating, and removing sprouts from budded stock has been in progress.

The weather continuing dry, very little germination is taking place in the vegetable plots. Sweetcorn and peas are up with a fair stand, everything else is still below ground. The windstorm on the 21st hit the acre garden and destroyed stands of cabbage, cauliflower, and early peas. Cabbage and cauliflower have been replanted, and the peas may recuperate from the roots.

Asparagus and rhubarb are still yielding well, although beginning to feel the effects of the drought.

Tartarian honeysuckle, golden currants, hawthorn, and lilacs, French hybrids and the common, together with a meager display of tulips, brighten the landscape a little bit about the station grounds. Lilies such as tiger, umbellatum, regal and Hansoni survived the winter and are up with a good stand. L. Hansoni provided a surprise as no growth was evident after planting last year. It appeared early this spring and seems to be doing well.

Arboriculture - The lining out of conifer seedlings continued during the week. All stumps from discarded species testing blocks have been pulled. Cultivation of nursery fields is in progress. Russian thistles are abundant in most fields. Seedlings are emerging very erraticly, and poor stands will result if rain is not received in the near future. A number of large conifer trees on which all the needles had "browned" and dropped off are now putting out new growth. They present a somewhat unusual appearance as they are entirely devoid of needles of previous years. Whether they will continue to grow is questionable at this time.

Several groups of High School students visited the station during the week. Mostly they seemed interested in fruits, evergreen trees, and vegetables.

BELLE FOURCHE:

The weather during the week was moderately warm and dry. The long period of no precipitation, commencing May 1, was broken only by a light shower of 0.03 inch on May 20. Moisture from the rains and snow late in April, has enabled crops to make a normal vigorous growth, but practically all the available soil moisture is now exhausted, and extensive drought injury will occur if rain is not received before the end of the month.

Native pastures are turning brown, and winter rye stubbled in after wheat is beginning to burn. Winter wheat and the various spring seeded crops do not show signs of suffering from lack of moisture, but the ground is cracking badly. Spring-sown small grain is 4 to 6 inches high, and alfalfa, sweetclover, and grasses seeded this spring have made an unusually good growth. Corn is coming up very unevenly, owing to the dry condition of the soil, and the stands on the different plots range from 15 to 75 percent of perfect.

Field work has consisted of trimming plots, cultivating roads and alleys, and planting potatoes.

Maximum temperature, 88°; minimum, 39°; precipitation, 0.03 inch.

ARCHER:

The weather during the week was warm and dry, with a few local showers during the latter part of the week. The precipitation of one of these showers, which passed over the station May 22, amounted to 0.30 inch. This revived the grasses which had shown severe drought conditions, but they are in great need of more moisture. Cultivated crops are not yet in serious need of moisture, but it would be very beneficial.

The green ash, Chinese elm, and American elm are putting forth their first leaves, otherwise all trees are in leaf. The corn on the rotation plots is emerging, and small grains have produced good stands. Silage corn is being seeded in the dairy field.

Work at the station consisted of spring-toothing the land in the dairy field (which is being seeded to corn), planting the late crops in the experimental garden, shearing sheep, and general miscellaneous work. The sheep produced an average fleece weight of 15 pounds per head. The heaviest fleece weighed 23.9 pounds and the lightest 10.3 pounds, both of these being produced by yearling ewes.

G. H. Starr and W. L. Quayle visited the station during the week.

Maximum temperature, 82°; minimum, 32°; precipitation, 0.30 inch.

NORTH PLATTE:

Dust storms swept over this section the first four days of the week. A light shower on the night of the 22nd brought an end to the dust. Heavy rains have been reported at several points near the station. Hail has been reported to have done severe damage to the small grain and alfalfa near Cozad, Nebr. The fallow and corn ground have a good supply of moisture, but the winter wheat and spring small grain ground are becoming quite dry at the surface.

Corn planting has been completed, and some of the first planting has emerged and is ready for cultivation. Two plots have been planted with the basin lister to compare yields with the ordinary lister and also with different methods of preparing the ground for planting.

Mr. Lyon and Mr. Conard, Soil Conservation Service, have been here all week weeding the grass nursery and transplanting several additional varieties into the nursery. The varieties seeded this spring have made excellent growth. Western wheatgrass, crested wheatgrass and bromegrass seeded separately and in mixtures in the sod rotation plots are making very good growth. The growth of grass in the native pastures in this section is above normal.

Maximum temperature, 84°; minimum, 45°; precipitation, 0.28 inch.

AKRON:

The week has been favorable for field work, and good progress was made with current seeding and with curbing the rapidly germinating and growing weeds. Some hail was reported at Akron, just 4 miles west.

Corn was seeded on the stubble land of last year's nursery and cereal variety ground. Variety cornland was also listed out in preparation for later seeding. All four series devoted to the general forage variety experiment were duckfoot cultivated. About 20 acres of land to be fallowed across the railroad this summer were rod-weeded. Rotation rye was plowed under for green manure Wednesday.

Head was in boot with a very few just showing, yet the crop was only 18 to 22 inches tall. Rotation sorgo plots were seeded Thursday and the corn, Friday. This seeding took place in soil with ample moisture to support immediate emergence. Ground squirrels are not noticeable on the rotation block this year, and no great trouble is expected with corn stands from this rodent.

Rotation winter wheat is now knee high with head in boot. All plots are livid green, even the green-manure seeded plots which usually burn before reaching this stage of growth. Blackhull winter wheat is in head in the variety experiment. Spring seeded small grains are at last beginning to show some promise, but some of the rotation plot stands are so very poor that they can never show good head cover.

Vanhoutte spirea has been the show-shrub this past week with Persian Yellow rose beginning to show color.

Maximum temperature, 85°; minimum, 39°; precipitation, 0.04 inch.

COLBY:

This has been a week of dust storms until today, when it is calm and cloudy after last night's light shower which cleared the atmosphere of the dust. The wind blew hard from the south and the air was filled with dust almost continuously for four days. There was considerable soil blowing on bare fields. When the dust storm was at its worst the visibility was about a fourth of a mile.

The spring small grains are making fairly good but not vigorous growth. Pastures are green but are not furnishing much pasturage. Bare fields are beginning to get weedy. On the stubble plots which had a growth of thistles last fall, and adjoining plots on which the wind scattered the seed, thistles came up thick and grew rapidly, exhausting most of the moisture which fell early in the month.

The winter wheat plots, except 571A, were drilled to barley the first of the week. The corn was all planted on the 21st. The ground was amply wet, but rather loose on all the plots, except in rotations 359 and 360 where no previous tillage had been done and the heavy growth of thistles had exhausted most the moisture.

Maximum temperature, 91°; minimum, 45°; precipitation, 0.16 inch.

HAYS:

Generally moderate temperature and dry weather have prevailed, accompanied by four days continuous, heavy southwest wind ending Friday night. The wind whipped the small-grain crops severely resulting in an undetermined amount of injury to all the small-grain crops. Many of the top leaves were bruised by the whipping of the wind, were curled and dried to the extent of interfering with the emergence of the heads. All crops were suffering but oats appeared to be suffering more than other crops. Sufficient numbers of the top leaves were dried up to give the oat-plots a brownish appearance. A few more days of the same kind of weather would have resulted disastrously for the small-grain crops.

However, a change in conditions is taking place as this report is in preparation. A gentle rain commenced falling early this morning (Saturday 23rd), and it has continued slowly all day. As a result the crops, which 24 hours ago were passing through a critical stage of development under most unfavorable conditions threatening destruction have been rescued by the rain. The new lease on life came in time, it is believed, to still make possible the production of a yield near normal. Of course more rain will be required to mature the crops satisfactorily. The moisture now present will carry the wheat well past the heading stage and produce good height of straw for harvesting.

Winter wheat is from 15 to 30 percent headed, barley 5 to 10 percent headed, oats 2 percent headed, spring wheat in the boot but no heads showing. Canada field peas are from 8 to 10 inches high. Alfalfa is now up to a good stand.

Work during the week included cultivation of some fallow and sorghum plots for destruction of weeds and the collection of soil samples for moisture determinations from a large number of wheat plots, and a few barley and oats plots.

Maximum temperature, 90°; minimum, 49°; precipitation, 0.04 inch up to 8 a.m. this morning. (One inch more has fallen during the day. This will be included with report for next week.)

GARDEN CITY:

The past week has been one with high wind velocity and almost constant dust storms. Farm land in this section which has not been cultivated since the rains of two weeks ago, and on which weed growth was just starting, has blown badly during the past few days.

Field work has consisted of rod-weeding D. L. A. wheat plots on which winter wheat has failed. Lister ridges were split on general farm fallow, and other land on the State project was cultivated to kill weed growth and prevent soil blowing.

Maximum temperature, 91°; minimum, 55°; precipitation, 0.03 inch.

TUCUMCARI:

While moderate to heavy rains have fallen in nearly all directions the past week, and the skies have been clouded much of the time, the station received only 0.29 inch in five showers. Total for the month to date is 0.51 inch, for 1936 to date, 1.22 inches.

Trees look remarkably well considering the dry weather. Tree fruits were killed by freezes in April, but grapes show nearly normal blooms. Some of the early varieties after blooming heavily have failed to set fruit. This tendency was noticed in 1934 and 1935, being largely confined to some four or five varieties. Those most noticeably affected by drought were Headlight, America, Cloeta, Delaware, Edna, and Captain. It appears that several of these will fail to set fruit this year, as in previous years. No grape vines were lost the past winter, but growth of many vines is weaker than usual, showing the struggle the vines have endured.

Watering newly planted trees and hoeing tree rows and vineyard were the only seasonal work conducted the past week, for fields are too dry to prepare for planting.

Maximum temperature, 92°; minimum, 50°.

DALHART:

Several intermittent showers during the week permitted the finishing of the spring plowed plots. The remaining increase fields were listed, and the variety blocks, previously listed, were cultivated with middle breakers. Additional moisture, received Saturday night (May 23) will permit planting those crops which should be planted now on the rotations and the planting of cotton varieties and the first date of sorghum varieties. While these showers are very local in extent, they have been sufficient in number now so that most of the territory south and east of here is covered by the rains.

All fall worked land was spring-tooth harrowed during the week, as were plots fallowed the previous year. Another planting of blue grama, sweetclover, and crested wheatgrass was made in the date of planting test. Pastures now show green for the first time this year. Thistles are just starting and 'goat heads' are coming so thick in soil drifts that the surface quarter inch of soil is being lifted like a big bubble or blister. Soil moisture has penetrated only 8 - 9 inches.

Maximum temperature, 89°; minimum, 53°; precipitation, 0.95 inch.

BIG SPRING:

Weather and soil moisture conditions have been very materially improved during the past week. On the night of May 17 a rain totaling 1.26 inches was received, and on the following night 0.42 inch was recorded. The most of the first one fell in about 30 minutes and caused a large amount of run-off, while the next fell slowly and all went into the soil. Moisture conditions are now ample for planting and seed germination, and this work will be pushed as rapidly as teams and equipment will permit.

The May 15 date of planting of sorghums and the cowpea varieties are emerging to good stands, and the soybeans are just breaking through the ground.

Cowpeas and cotton in the rotations were planted during the week, as was also an increase block of Sudan grass. Other work consisted of plowing the fallows and staking all of the D. L. A. project.

Maximum temperature, 90°; minimum, 48°; precipitation, 1.68 inches.

LAWTON:

Good rains and showers were recorded over extensive areas on the 22nd and 23rd, with a measurement of 1.12 inches at the station. These rains will greatly benefit row crops, native grasses, and legumes. This same benefit will extend to some of the oats and an occasional field of wheat. Station fields of oats are too near maturity to be helped very much, but some of the wheat should fill much better.

Five varieties of wheat, most of the winter oats, and the remainder of the winter barley were harvested on the 22nd. Considerable cultivating was done on station crops during the past week and field work as a whole is in good shape. Oats and several varieties of wheat will be ready for harvest within a few days. The alfalfa areas on the station which usually yield a fair crop of hay during the spring produced a total of about 1,500 pounds this year.

Feterita replanted on the rotation plots on the 19th emerged to good stands on the 24th. Listed plots of kafir were filled on the 18th, and replanting will be done at the earliest possible date. Good stands of cotton were obtained on all station plantings. Cotton planting on the surrounding farms is nearly completed, and emergence appears to be good on many fields.

The May rainfall to date equals 3.25 inches.
Maximum temperature, 90°; minimum, 55°.

WOODWARD:

1.38 inches of rain was recorded on the 17th and 0.45 inch on the 23rd. As this is written, rain is still falling gently. Precipitation for the week has been over 2 inches, and there has been practically no run-off. The temperatures have been moderate, skies cloudy, and there have been no high winds. Though the possibilities of any large yields of wheat here were precluded by early drought, the probability of moderate yields of good quality have been greatly increased by conditions over the past week. The outlook for feed at least from the sorghums the coming season has been greatly improved since the soil has been wet to some depth.

Much apprehension has been felt over trees on the station and about the country generally if drought continued. The present outlook is much more hopeful.

A planting of a rather large number of grass varieties was made just previous to the present rain. It is hoped a good stand will be obtained, as conditions seem ideal.

The Virginal Mockorange is at present making the best display of bloom on the station. It is much showier than other mockoranges. The Heckrotti honeysuckle is also a richly beautiful thing, as it has been for some time. The China fleecevine is beginning to bloom and will continue all summer.

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# WEEKLY STATION REPORTS

## OF THE DIVISION OF

## DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 30 1936

Not for publication without
prior consent of this division.

# REPORT FOR THE WEEK ENDING MAY 30, 1936.

## HAVRE:

Unprecedented temperatures, ranging from 94° to 98°, have prevailed during the last four days. The previous 56-year absolute maximum of 96° for May has been equalled or exceeded four times thus far. Precipitation to date this month totals 0.39 inch or about one-fifth of the normal.

Benchland ranges have mostly dried up, the flow of streams is rapidly diminishing, winter rye appears almost a complete failure, and small grains on continuous cropping methods are firing and becoming weedy. Spring sown cereals on well prepared fallow still have a chance. Cultivation of forages planted in rows and weeding alleys was completed.

The station herd numbering about 330 head of cattle was moved to summer pasture in the Bear Paw Mountains lease, where at an altitude of 5,000 to 6,000 feet, conditions are refreshingly different from the parched country in the vicinity of the station.

Station visitors included Ralph D. Mercer, Extension Agronomist, E. G. Davis, Associate Entomologist, U. S. D. A., from the State College; and A. D. Stoesz and Mr. Webber of the Soil Conservation Service.

Maximum temperature, 98°; minimum, 39°; precipitation, 0.

## JUDITH BASIN:

Field work for the week included plowing and duckfooting for fallow and cultivating plot alleys, shelterbelts, and ornamental trees.

Weights of the cattle on experimental pastures taken May 29 show that those pastured on crested wheatgrass have made an average gain of 146 pounds per animal for the preceding month.

The weather for the past week has been very warm and dry, and all crops have suffered from drought. Thick stands of crested wheatgrass have been injured beyond recovery even if optimum conditions should prevail during the next few weeks, and the yields from other perennial forages have been limited. Spring grains are still in fair condition and can produce good yields with moisture.

Maximum temperature, 91°; minimum, 46°; precipitation, 0.

## HUNTLEY:

Drought and high temperatures continued throughout the week and were reflected in the condition of all crops in general. Grains which have not already begun to burn have shown marked wilting during the warmest part of the day, and very little growth has taken place since last week. Corn is emerging in spots, but stands will not be complete until rain is received to wet the dry areas. Winter rye is jointing and a few heads have appeared on some of the plots, but the tallest plants are no more than 15 inches in height. Crested wheatgrass in several of the plantings appears to have cured and looks very dry.

Grasshoppers continue to hatch in large numbers in grass and alfalfa plots, along fence rows and roadsides, and in permanent pastures and waste lands. Poisoned bran was spread over the infested areas on and adjacent to the Dry Land fields twice during the week as a control measure.

Field work has consisted of plowing fallow and cultivating roads, alleys, and seed alfalfa plots. Hogs on all pastures were weighed. Soybeans, sorgo, and Sudan grass was planted in the pasture-experiment plots.

Maximum temperature, 96°; minimum, 40°; precipitation, 0.

SHERIDAN:

Warm weather, high wind much of the time, and no rain were the principal characteristics of the week. Early sown spring grain began to fire early in the week, and much of it is now in poorer condition than fall grain in which the stand ranges from poor to only just fair. Later seedings, including spring grain in the rotations, do not show any firing as yet. All pasture land, including native range where it has not been pastured yet this season, continued to deteriorate. Some shipments of livestock from this section, because of the drought situation, have been reported. Unless poisoning of grasshoppers is more effective than in past years, it is doubtful if there will be any hay to cut even in low places.

Corn planted last week is emerging with a much better stand than that was expected, although it is quite uneven. Planted as deeply as the planter would plant, more of the seed evidently reached moist soil than was thought at the time. Sorgo, Sudan grass, and millet were sown. The rotation fallow plots were plowed and packed.

Maximum temperature, 93°; minimum, 36°; precipitation, 0 (0.03 inch from April 28 to date).

DICKINSON: (Report for the two weeks ending May 30, 1936.)

Dry weather continued to the end of May. Precipitation for the month was 0.61 inch. Conditions are almost as bad as at this date in 1934. Precipitation for the 9 months ending May 31, 1936, amounted to only 3.68 inches; for the same period in 1934, the precipitation was 3.87 inches; in 1935, 7.80 inches; and the 44-year average for the same 9 months, 8.14 inches.

All crops are now showing a marked effect of the dry weather. Small grains are backward, usually very weedy, and in the driest fields the grain has little chance for a crop should heavy rains come soon. Grains on fallow and corn ground are firing some. The better fields, however, could still make average yields with plenty of rain. Pastures are very short. Cultivated grasses are drying up, except where snow had drifted or water stood early in the spring, and such areas are becoming smaller every day. Corn has not fully emerged but more is up than in 1934, and the stands of grain are also better. A few local showers have improved conditions in some districts but the dry area is extensive.

Maximum temperature, 91°; minimum, 36°; precipitation, 0.08 inch.

MANDAN:

Agronomy - The past week has continued dry with several days of high wind. Corn is starting to come up in spots. Millet varieties were seeded during the week. Small grain is still holding up. Crested wheatgrass, alfalfa, and bromegrass are about all dried up.

Maximum temperature, 91°; minimum, 41°; precipitation, 0.01 inch.

Cooperative Grazing Experiment - The steers were weighed, divided, and started on their pastures. The average weight per head of the steers was 470 pounds. Yearling Hereford steers were obtained for the experiment this year instead of the usual 2-year-olds. The crested wheatgrass pasture is badly dried and in much the same condition as it was at the same time in 1934. The mixed-grass pasture, seeded last year, is in excellent condition for grazing at present. A heavy covering of snow was held on it last winter. Native pastures are really in better condition for grazing than they were last year at this time. Grass started earlier this year, and most of the pastures contain plenty of carry-over feed.

Arboriculture - About 150 pounds of American elm seed has been collected during the week. Soil is too dry to work down to plant the seed.

The majority of conifer seedbeds have been made and planted. Conifer seedlings lined out this spring are suffering severely from drought, with large numbers already dead. Chinese elm trees apparently suffered severe drying this spring. Large trees on the station and in the cities of Mandan and Bismarck are now commencing to put out a few weak leaves. The buds were all swollen this spring, but later died and apparently most of the last two season's growth. The few seedlings of the various tree species which have emerged are making no growth.

Horticulture - The second spray of the season is being applied. A combination spray of arsenate of lead, lime sulphur, and nicotine sulphate is being used.

The dry weather has made it necessary to water some of the trees planted this spring. Stands are poorer than usual. A high wind was responsible for breaking some of the older trees, especially buffaloberries. Such breakage in the orchards has been repaired and the wounds covered with grafting wax.

Most weeds are being held in check by the dry weather, but Russian thistles are an exception and are coming up thickly in places. The second cultivation of the season is in progress.

Visitors for the week included F. E. Cobb, State Director, National Shelterbelt; Orris Roberts, U. S. Weather Bureau; A. C. Cooley, Dept. of Interior, Washington, D. C.

BELLE FOURCHE:

The spring drought continued unbroken during the week. Evaporation was excessive, owing to a strong warm wind which prevailed for 5 consecutive days, and rapid depletion of soil-moisture occurred. A total of only 0.05 inch precipitation was received in May, which is the lowest of record for May, and it is 3.01 inches less than the average for the month.

All small grains are suffering from lack of moisture. Winter rye is burning badly and is attempting to head. Winter wheat is firing, and spring sown small grain is beginning to burn. The ground is cracking extensively on all early seeded plots, and roadways are too dry and hard to permit cultivating.

Visitors for the week included L. Harris, Scottsbluff Field Station, Mitchell, Nebr., and S. B. Nuckols, Sugar Beet Investigations, Scottsbluff, Nebr.

Maximum temperature, 92°; minimum, 49°; precipitation, 0.02 inch.

ARCHER:

The weather during the week ending May 30 was mild to cool. A slow rain, which totaled 0.66 inch, started May 27 at about 2 p.m. and continued until the following morning. This was followed by cool, cloudy weather with some fog. These conditions were of great aid to crops, especially native grasses. During the cool weather garden plants were set out. The seeding of corn in the dairy field was completed, and the station potato crop was planted. Final soil preparations are under way for the seeding of Sudan grass and millet.

Maximum temperature, 78°; minimum, 44°; precipitation, 0.70 inch.

NORTH PLATTE:

The first part of the week was mostly clear and warm. A light rain on the night of the 28th added a slight amount of moisture to the soil. The winter wheat on stubble and corn ground is heading and in need of rain. Light yields will be obtained from this grain. The wheat on summer-tilled ground is looking good and will begin heading in a few days. Small grains are making good growth. The corn is up and the stands are very good. Thinning has started on the variety plots. The seeding of sorghums and kalo is being made. Alfalfa cutting has started in this area.

Plans are in progress for the annual Crops Day to be held at this station on June 25.

Maximum temperature, 81°; minimum, 50°; precipitation, 0.37 inch.

AKRON:

Rainfall over the week-end not only brought May up to and above normal, but entirely corrected the deficiency for January-May. This very timely fall was in the nature of a drizzle beginning Wednesday afternoon and extending through to Saturday morning. There was practically no run-off from the 1.51 inches recorded at the station.

Winter wheat on cornland here at the station was showing direct evidence of a closely approaching depletion of available soil moisture, but this rain has prevented any burning. Temperatures did not fall especially low, and it is not expected there will be any delay in the emergence of corn. Spring grains continued to show marked improvement in appearance. Club Mariout barley on the rotation plots is heading this week-end. The season has been peculiar in the extreme forwardness of winter wheat, and conversely the backwardness in the development of early-spring-seeded small grains and in the leafing out of the deciduous forest trees.

Rate and spacing corn was seeded Monday. Sorgo and soybeans on this project, and corn and sunflowers on the general forage variety experiment were seeded Tuesday. The corn variety experiment was about half seeded by Wednesday afternoon when the team and workers were driven from the field by the first shower. Other field work accomplished before the rain was the cultivation of the new No. 1, and the No. 2 forestry experiments, and the rod-weeding of the station roadways. Work accomplished after the rain was the threshing of the bagged heads of the last year's sorghum nursery, and the cleaning-up of the seed house and the barn.

Messrs. Lindsey Brown and MacPherron arrived early in the week from Fort Collins to help with the soil survey of the county in which this station is located. Mr. Knoble, Bureau Chemistry and Soils, also arrived early in the week. Two men from Fort Collins working on a plant cover survey in connection with the soil survey visited a short time Thursday. L. L. Zook, Superintendent of the North Platte Station visited Monday.

Persian Yellow Rose is a mass of bloom among the foundation plantings. Deciduous trees are at last in full leaf. Evergreen trees, even among the older trees which appeared to be suffering the most from the past unusual seasons, are showing new growth of 3 to 6 inches.

Maximum temperature, 80°; minimum, 41°; precipitation, 1.51 inches.

COLBY:

This has been the most favorable week for crops so far this year. There has been almost no wind, and it has been cloudy every day with rain 5 of the 7 days. The precipitation of over an inch fell in the form of very easy, intermittent showers, so there was no run-off.

The spring small grains are doing nicely, although still showing the effects of the high winds of last week. Weeds are growing rapidly and, where not controlled, have used up practically all the available moisture in the soil. The corn on the plots is coming through today.

Maximum temperature, 80°; minimum, 49°; precipitation, 1.08 inches.

GARDEN CITY:

This is the third wettest May since the beginning of our records in 1908, the total being 5.64 inches. The normal for the month is 2.54. Measurable amounts of rainfall have been received on each of the past 9 days, thus breaking the two-year drought.

Row crop planting begins next week, and with all this moisture, prospects look very favorable. The wheat on the D. L. A. project was a failure, and the plots were rod-weeded. Sudan grass will be drilled in those wheat plots that are not scheduled to be worked until next spring.

Visitors at the station were E. F. Chilcott, O. R. Mathews, and R. C. Cole of the Woodward Field Station, and T. B. Stinson of the Tribune Station.

Maximum temperature, 79°; minimum, 57°; precipitation, 2.91 inches.

HAYS:

The weather has been cool, cloudy, and rainy all week, precipitation having occurred in measurable quantities on four days. All small grains have been making rapid progress. Wheat, oats, and barley crops are well out in head. Wheat averages 24 to 30 inches high, barley and oats about 24 inches. Spring wheat is also about 24 inches high but is not yet headed. Canadian field peas are about 18 inches high and beginning to bloom. The ground has been too wet to permit turning them under up to the present time.

The country has lost everything remindful of the "dust bowl", and people are optimistic and happy. The wheat generally is thin, but of good height and heading well and there is sufficient surface and subsurface soil moisture to carry the wheat for 10 days. Another good rain in about 10 days should make a normal wheat crop for Ellis County.

The soil has been too wet for tillage work during the week. Another crop of weeds covers the whole landscape not covered with wheat or grass. The surviving buffalo grass is making numerous thrifty runners, and setting an unusually heavy seed crop. In places where it is very thin, there appears to be some danger of weeds over-shading the grass.

Maximum temperature, 79°; minimum, 54°; precipitation, 3.10 inches.

TUCUMCARI:

A week of cloudy days, frequent showers, low temperatures, and low wind velocity has been in marked contrast to several score previous weeks. Precipitation totaled only 1.23 inches in five showers, bringing the total for the month to 1.74 inches and for the year to date to 2.45 inches. Surrounding points have reported from 4 to 7 inches the past week, with roads in nearly all directions impassable. Heavy rains were received over most of the "dust bowl", renewing hopes of a row crop and enabling farmers to proceed with planting, although it is admitted the wheat yield will be very, very light.

Spring plowing has been performed between showers, and general field cultivation in preparation for planting started yesterday. Peanuts and cotton are the only crops planted on the station, aside from grass seedings made with both lister and drill on old, abandoned crop land, grown up to weeds and grasses of low value.

Trees and ranges are showing the effects of the recent showers, and moisture already received will permit crop preparation and planting to proceed. The situation has been relieved, temporarily, but this vicinity at least will require additional moisture in the very near future.

Maximum temperature, 80°; minimum, 55°.

DALHART:

Precipitation has been received on 10 of the past 13 days, the total being 2.76 inches. With the two largest daily precipitations of 0.71 and 0.60 inch, and with all moisture coming as gentle showers, there has been absolutely no run-off. There has been a minimum of wind, and with cloudy conditions prevailing during the period, conditions have been ideal for the storage of this rainfall. For the past week a total of 1.81 inches has been received; this was recorded 6 days. Soil moisture penetration studies made today noon indicates that uniform penetration has been secured on the station, irrespective of the condition of the surface soil. The average penetration is 14 inches, with a larger amount of moisture in this strata than the field carrying capacity would indicate. The moisture has been received locally as gentle showers which have covered rather limited areas, but most areas in this immediate territory report sufficient moisture for planting. Apparently, from reports, our rainfall reading is about

average for the territory. Other sections had larger rains and considerable run-off.

The frequent showers which kept the surface soil wet all of the time delayed planting. The corn, pinto bean, soybean, and peanut rotations were planted this week, as were the cotton variety test and the cotton nursery. Other planting consisted of the planting of additional terraces in the pasture and a method of planting test with blue grama grass in cooperation with J. E. Smith, Jr., of the Soil Conservation Service. All grass seedings made before this week are showing excellent emergence, irrespective of the date or method of seeding. The frequent showers, low wind velocity, high humidity, and cloudy sky have given near ideal conditions for emergence. Blue grama grass seedlings are also coming rather profusely in native sod, they are especially thick in the established grass clumps. Sweetclover and crested wheatgrass are also coming good. Where blue grama hay was scattered and pressed into the soil with a grain drill or disk, green ribbons of seedlings are showing down the disk marks.

In addition to some 8 or 10 technicians of the S. C. S. staff for this region, other visitors included 8 S. C. S. assistant county agents for this immediate territory.

Maximum temperature, 76°; minimum, 54°; precipitation, 1.81 inches.

BIG SPRING:

Rains have continued during the past week to such an extent that the soil was dry enough for planting purposes only a little more than half a day. Rains ranging from 0.12 to 0.61 inch were received on 5 days during the past week, with a total for the period of 2.08 inches. Planting was resumed Friday p.m., but was halted again Saturday morning.

The total rainfall for the month thus far is 4.55 inches, as compared with 2.67 inches as a normal for May. The soil is thoroughly soaked now, and a few days of dry weather would be very desirable in order that planting might be completed. Weeds are growing rapidly and should be covered up before they get too much of a start.

It is astonishing to note what a remarkable change can be wrought in the looks of this country in a few days time by a little rain. Only a short time ago the ranges presented a brown and almost barren appearance, and now they are covered with a green carpet of grass.

Station work has consisted of planting Sudan grass, cotton varieties, and part of the cotton in rotations and spacing experiments. Other work has been devoted to hoeing weeds and repairing machinery.

Maximum temperature, 81°; minimum, 56°; precipitation, 1.62 inches.

LAWTON:

Scattered showers and rains covering extensive areas during the past week of cloudy weather and moderate temperatures provided optimum growing conditions for corn, sorghums, and cotton and for native grasses and legumes. Five rains recorded May 22 - 28 totaled 2.93 inches, bringing the May total to 5.06 inches. Very little water was lost by run-off, and the moisture content of cultivated land is good.

The rains were too late to be of much benefit to wheat, but most fields of oats were very materially aided. Wheat has ripened rapidly the past week, and many fields are ripe enough to cut with a binder, but the growth is so short and thin that the use of combines will be necessary. Practially all of the station fields of oats are ripe, and the remainder of the wheat variety test as well as a field of Tenmarq and 7 or 8 rotation plots of wheat should be harvested as soon as possible. Station work demanding immediate attention includes harvesting, sorghum thinning, and cultivating.

K. S. Quisenberry and C. O. Johnston, Cereal Crops and Diseases, and several county agents were station visitors during the week.

WOODWARD:

Since the last of April conditions over this section of the country have changed entirely. At that time wheat was dying of drought. Since then there has been 5.21 inches of rainfall, and wheat will yield as well as its previously stunted condition will allow. On the station it seems likely it will average over 12 bushels, and some plots on fallow appear to give promise of 25 bushels or more. Because much wheat over the country, especially to the west of Woodward, was abandoned early or blew out, vast acreages will go into row crops. For these the soil is in prime condition. From all the rainfall, there has been very little run-off.

For several years trees and shrubs have been drooping and dying of drought, and at best the foliage has been covered with dust. The fresh vivid green appearance of such plantings at present is remarkable by contrast.

Work of the past week has consisted largely of digging up trees beyond recovery from several years of drought. Had they been able to "stick it out" for a few more months they might still be as fresh and green as their fellows, through which they are dragged. Removal of the dead trees makes ugly breaks in avenue plantings. Other work has been planting grass on lawns and fertilizing them, and plowing rotation plots for row crops.

Maximum temperature, 78°; minimum, 59°; precipitation, 2.00 inches.

PENDLETON: (Report for the two weeks ending May 30, 1936)

The period from May 22 to 27, inclusive, was very hot for this section and time of year with maximum temperature on the 26th of 95° and 103° at Pendleton, sharing the doubtful honor with Phoenix, Ariz., as being the hottest place in the U. S. on that day. The hot spell was soon broken and normal temperatures have since prevailed. Several high winds occurred during the week, bringing in the inevitable dust. The station buildings are receiving a coat of paint, the residence and office are finished.

Winter wheat is fully headed, and spring barleys are beginning to head. Wheat in this area is in good condition, but the drier areas of this county are in bad condition; some of the winter wheat is so far along that rains will be of little benefit. One day of the past week was spent with the county A.A.A. committee, examining fields to be plowed under for green manure crops. A small percentage of the farmers in Umatilla County are signing up under the new plan, mostly farmers on the poor lands. The farmers on the better lands are claiming that the present scale of payments is too low. Harvest of

canning peas started on the 28th, yields of early peas are about 25 percent below normal. Early sown peas are in need of rain, later varieties will need rain soon. Sweetclover, rye, and peas on the station were plowed under for green manure this week. Some alfalfa has been cut. Most of the range bands of sheep have been moved into the mountains; shearing is practically completed.

Visitors: Messrs. Smith, Fisher, Tingey, and Mullen of the Division of Forage Crops and Diseases, Pullman, Wash.

Maximum temperature, 95°; minimum, 30°; precipitation, 0.09 inch.

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NOTE:

On May 16, 1936, Dr. L. A. Brown resigned from his position as Agent in charge of the D. L. A. project, at Garden City, Kansas, to assume duties with the Agronomy Department of the Colorado State Agricultural Experiment Station at Fort Collins, Colorado.

Mr. F. A. Wagner, who has been superintendent of the State Branch Station there for many years was appointed (June 1, 1936) as Agent in charge of the D. L. A. project and Mr. H. J. Haas, who graduated at Kansas State College of Agriculture this year, was appointed (May 27, 1936) to assist in this work.

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